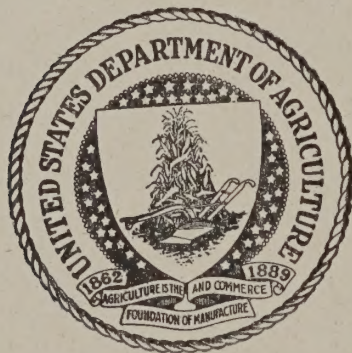


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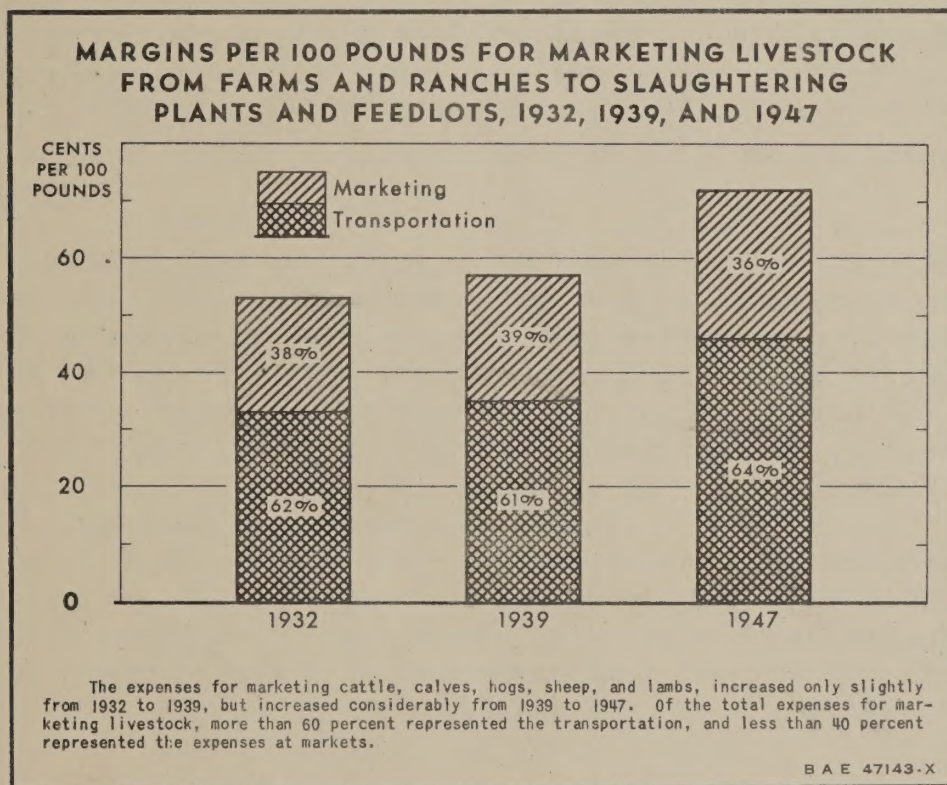
FOR

MARKETING LIVESTOCK

from

FARMS TO SLAUGHTERING PLANTS

AND FEEDLOTS.



WASHINGTON, D. C.

JULY 1949

MARGINS FOR MARKETING LIVESTOCK

FROM FARMS TO SLAUGHTERING PLANTS AND FEEDLOTS 1/

By Edmund Farstad, Agricultural Economist

The margins involved in the marketing of livestock are important to both producers and consumers. Sales of meat animals in 1948 accounted for approximately 30 percent of the total cash farm income in the United States. From the retail consumer's standpoint, meat usually accounts for about one-fourth of her total expenditure for food. Returns received by producers for livestock as well as prices paid by consumers for meats and meat products are affected by the size of the margins.

This report deals with the magnitudes and the general make-up of margins for marketing livestock during periods of different price levels. Marketing margins, as used in this study, represent the amounts paid for marketing and transporting livestock from farms and ranches to slaughtering plants or feedlots. In studying these margins, three periods were selected for analysis and comparison: 1947 as a recent year and a year of very high prices for livestock; 1939 when livestock prices were near average; and 1932 when prices for livestock were very low.

Margins for marketing all livestock, including transportation, from farms to slaughtering plants and feedlots were 72 cents per 100 pounds in 1947 (table 1). This compares with 57 cents per 100 pounds in 1939, and 53 cents per 100 pounds in 1932. Of the total marketing margins, more than 60 percent represented expenses for transportation and less than 40 percent represented expenses at markets.

Margins for marketing livestock - cattle, calves, hogs, and sheep and lambs - represent the differences between the values of animals at slaughtering plants and feedlots and the returns received by producers. In this study, margins were measured by combining the expenses incurred in moving animals from farms to markets, slaughtering plants, and feedlots, and the expenses for services rendered at markets. Expenses for transportation applied to both rail and truck movements of livestock. The expenses at markets included fees and charges for both feeder and slaughter livestock.

1/ This preliminary report is based on a study that was made with funds authorized by the Research and Marketing Act of 1946. This study was made in conjunction with another study reported in Farm-to-Retail Margins for Livestock and Meat, by Kathryn Parr, Bureau of Agricultural Economics (processed), June 1949.

Table 1.-Weighted average expenses per 100 pounds of marketing all livestock, (cattle, calves, hogs, sheep and lambs), 1932, 1939, and 1947

Nature of expenses	1932	1939 ^{1/}	1947
	Cents	Cents	Cents
Expenses at markets ^{2/}	20	22	26
Transportation expenses ^{2/}	33	35	46
Total	53	57	72

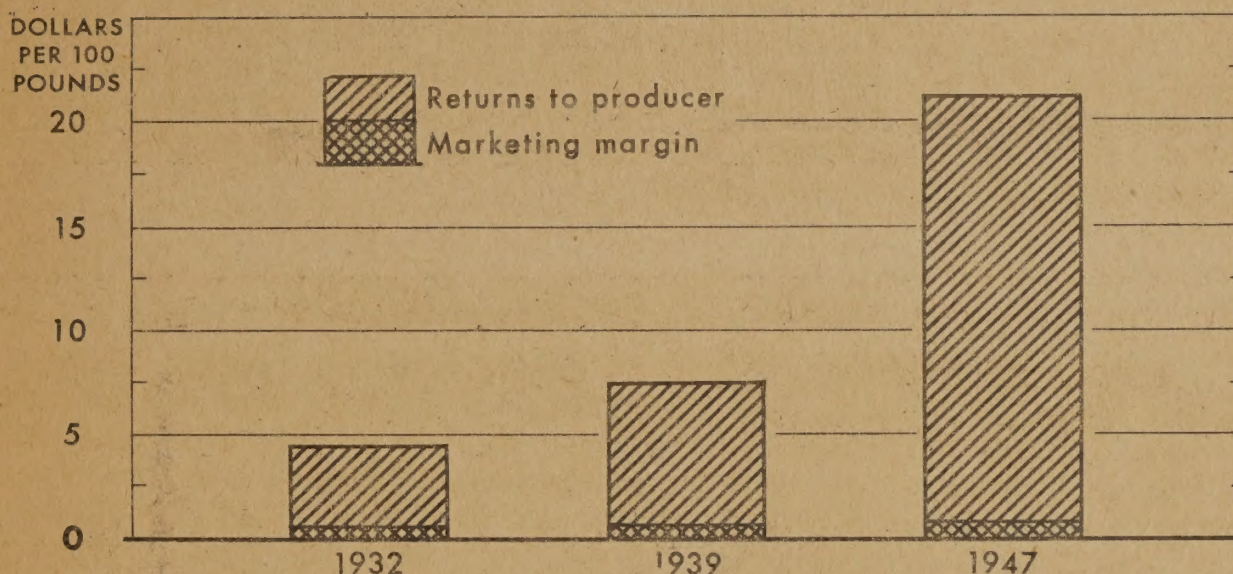
^{1/} From Marketing Margins and Costs for Livestock and Meat, U.S. Department of Agriculture, Tech. Bul. 932, page 19. 1947.

^{2/} Average charges for cattle, calves, hogs, sheep and lambs, were weighted by their relative gross weight marketed.

The margins for marketing livestock may remain fairly constant over a period of time even if prices of livestock change moderately (fig. 1). But when prices advance considerably, especially over a long period, marketing charges are likely to increase; and when prices decline sharply, charges may decrease. But changes in marketing charges lag behind changes in livestock prices, and the rate of change is proportionately less. For that reason, producers receive a larger proportion of the market value of livestock when prices are high than when they are low.

Average prices for livestock per 100 pounds at slaughtering plants and feedlots were computed by combining the average prices received by farmers for livestock and the average marketing charges for each of the periods. Weighted average prices received by farmers for all livestock per 100 pounds are the combined prices of cattle, calves, hogs, sheep and lambs weighted according to their relative importance in terms of gross weight marketed. Weighted prices for livestock per 100 pounds at slaughtering plants and feedlots were \$21.04 in 1947, \$7.42 in 1939, and \$4.45 in 1932. Of these amounts, \$20.32 were received by producers in 1947, compared with \$6.85 in 1939 and \$3.92 in 1932. The remainder of the prices was paid to marketing agencies for transportation and for services at markets. In 1947 the margin for marketing livestock was equal to 3.4 percent of the average prices for livestock at slaughtering plants and feedlots. In 1939 the margin was 7.7 percent but in 1932 it was 11.9 percent.

**VALUE OF LIVESTOCK PER 100 POUNDS AT SLAUGHTERING
PLANTS AND FEEDLOTS, SHOWING THE MARGINS FOR
MARKETING AND RETURNS TO PRODUCERS,
1932, 1939, AND 1947***



*AVERAGE PRICES RECEIVED BY PRODUCERS FOR CATTLE, CALVES, HOGS, SHEEP, AND LAMBS, WERE WEIGHTED BY THEIR RELATIVE IMPORTANCE IN TERMS OF GROSS WEIGHT MARKETED

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As marketing charges for livestock change less, proportionally, than do livestock prices, producers receive a larger proportion of the market value when prices are high than when prices are low. In 1932, the margin for marketing livestock from farms to slaughtering plants and feedlots was equal to 11.9 percent of the market value of livestock. In 1939 it was 7.7 percent; and in 1947, 3.4 percent.

Margins Not the Same for Different Species

Table 2.-Weighted average expenses of marketing per 100 pounds, by species, 1932, 1939, ^{1/} and 1947.

Nature of expenses	Cattle			Calves			Hogs			Sheep & Lambs		
	1932:1939:1947			1932:1939:1947			1932:1939:1947			1932:1939:1947		
	Ct.	Ct.	Ct.	Ct.	Ct.	Ct.	Ct.	Ct.	Ct.	Ct.	Ct.	Ct.
Expenses at markets ^{2/}	17	20	24	26	24	32	18	19	23	30	28	34
Transportation expenses ^{3/}	31	33	44	43	45	60	31	33	45	40	42	55
Total	48	53	68	69	69	92	49	52	68	70	70	89

^{1/} From Marketing Margins and Costs for Livestock and Meat, U.S. Department of Agriculture, Tech. Bul. 932, page 19. 1947.

^{2/} Charges at markets were ascertained by weighting the charges at each type of market by the proportions of livestock handled at each type.

^{3/} Charges for transportation were ascertained by weighting the rail and truck charges by the proportions of the livestock handled by each type.

Margins for marketing and transporting livestock vary by species. Charges per 100 pounds and for transportation at markets were higher for calves, and for sheep and lambs than for cattle and hogs (table 2). The reasons are the relatively high expenses of marketing animals of lighter weight, the greater distance of the average shipment of sheep and lambs, and the differences in relative values of the species per head. The actual freight charges paid for rail shipments of calves and lambs, per 100 pounds, are higher than rates paid on shipments of animals of heavier weights because of the difficulty of loading light-weight animals to carload minimum weights, as provided in the tariffs. Rates for truck transportation are not the same for different species of livestock; they are relatively higher, per 100 pounds, for calves, sheep, and lambs, than for cattle and hogs. On a per head basis, the expenses of marketing cattle and calves were more than hogs, and sheep and lambs.

Margins for Marketing Livestock

Margins for marketing livestock depend upon the average charges at the different types of markets, the proportions of animals that cleared through each type, and the transportation charges for the average distances from which livestock were received at markets, slaughtering plants, and feedlots. Marketing margins as computed for 1932, 1939, and 1947 were naturally widened by that part of the livestock which moved through more than one type of market, or through more than one market of the same type (table 3). But the margins as

Table 3.-Expenses of marketing livestock per 100 pounds, by species, 1932, 1939, ^{1/} and 1947 ^{2/}

Type of market	Cattle			Calves			Hogs			Sheep & Lambs		
	1932	1939	1947	1932	1939	1947	1932	1939	1947	1932	1939	1947
	Cts.	Cts.	Cts.	Cts.	Cts.	Cts.	Cts.	Cts.	Cts.	Cts.	Cts.	Cts.
Public markets	18	20	24	34	34	44	21	24	28	37	39	46
Auctions	19	22	30	22	26	48	19	22	43	26	31	45
Concen. yards	9	11	14	9	11	14	9	11	14	9	11	14
Local coop.												
assns.	10	15	18	10	15	18	10	15	18	10	15	18
Dealers	10	15	18	10	15	18	10	15	18	10	15	18
Weighted av.	15	18	22	24	22	30	16	17	21	29	27	33
Adjusted av.	17	20	24	26	24	32	18	19	23	30	28	34
Transportation	31	33	44	43	45	60	31	33	45	40	42	55
Total	48	53	68	69	69	92	49	52	68	70	70	89

^{1/} From Marketing Margins and Costs for Livestock and Meat, U.S. Department of Agriculture, Tech. Bul. 932, page 20. 1947.

^{2/} Average expenses at all markets were ascertained by weighting the expenses at each type of market by the proportions of livestock handled at each type. Weighted average includes the expenses of marketing animals at more than one market. Weighted averages were adjusted to include duplication of marketing at the same type of market. The expenses for transportation were ascertained by weighting the rail and truck expenses by the proportion of livestock handled by each type.

computed do not include an estimate for the value of services performed by farmers in handling and selling their own livestock and they do not include losses which resulted from shrinkage of tissue, bruising, death, and crippling of animals in transit or at markets.

Margins for marketing were obtained by combining the average charges at markets and the average charges for transportation. Average charges at markets were computed by weighting the average charges at each type of market by the proportions handled at each type, and adjusting for duplications in marketings at the same markets or at markets of the same type. The proportions used in ascertaining the average charges for all markets are shown in table 4.

Table 4.-Markets through which livestock cleared from farmers to packing plants, to feeder or other users, 1932, 1939, ^{1/} and 1947 ^{2/}

Type of market	Cattle			Calves			Hogs			Sheep & Lambs		
	1932	1939	1947	1932	1939	1947	1932	1939	1947	1932	1939	1947
	Pct.	Pct.	Pct.	Pct.	Pct.	Pct.	Pct.	Pct.	Pct.	Pct.	Pct.	Pct.
Public markets	64	53	51	60	43	41	54	43	39	71	51	48
Auctions	2	13	15	2	13	15	1	7	9	1	11	14
Concen. yards	2	5	5	2	5	5	14	16	16	0	8	8
Local coop assns.	7	4	4	7	4	4	9	5	5	7	4	4
Dealers	25	20	20	25	20	20	21	16	16	18	13	13
Direct to packers and others	12	23	23	13	23	23	21	25	34	12	24	30

^{1/} From Corn Belt Livestock Marketing Research Committee, Marketing Livestock in the Corn Belt Region, S. D. Agri. Expt. Sta., Bul. 365. 1942.

^{2/} The proportions of the different species of livestock that moved through each type of market in the Corn Belt were used in ascertaining the proportions handled by each type of market for 1939 and 1947. Estimates for the proportions handled in 1932 were made on the basis of the numbers of markets in existence and the approximate volumes handled by each.

The sums of these proportions exceeded 100 percent because some animals moved through more than one type of market.

Changes in the proportions of animals marketed at the different types of markets affected the average margin for transportation and marketing because of the varying rates charged at the different markets. The proportions marketed at terminal public markets decreased from 1932 to 1939; but the proportions sold direct to packers, and the proportions handled at auction markets increased. The increased use of motortrucks, improved roads, and the greater availability to farmers of market-news information led to the increase in direct sales to packers and to the increase in slaughtering at interior packing plants. The widespread development of local auctions also was made possible by the development of trucks for hauling livestock. Specific information on the changes in the proportions of livestock handled at the different types of markets between 1939 and 1947 are not available, but these data were estimated on the basis of general information on livestock movement as revealed by marketing information.

Charges at Different Types of Markets

Average charges for marketing livestock at different types of markets were different in each of the years studied, mainly because of the differences in services rendered at the markets. Local cooperative associations and country dealers primarily performed the functions of local assembly and forwarding livestock direct to slaughtering plants, or to markets for sale. Concentration yards located at country points assembled livestock in relatively large numbers and forwarded them in carlots or truck loads to packing plants or to other outlets. Terminal public markets and auctions provided facilities for handling and caring for livestock and performed various other services relating to transactions between the buyer and seller of livestock.

Generally, an individual producer, when marketing his livestock, can choose among different types of markets, and among individual markets of the same type. He may perform some or all of the marketing functions himself. He may furnish his own transportation and sell direct to packing plants or to others; or he may pay others for rendering such services. Presumably, most producers select the market where they expect the net returns (after deducting transportation and marketing charges) to be the largest, although the convenience of selling at a particular market may also influence his choice.

Charges at Public Markets.-Average charges per 100 pounds for marketing livestock at the terminal public markets, excluding transportation, were 27 cents in 1947, compared with 23 cents in 1939,^{2/} and 22 cents in 1932. Charges were not the same for all species, and were less per 100 pounds for cattle and hogs than for calves, and sheep and lambs (table 3).

Charges at public markets were of major influence in determining the average charges at all types of markets for the three periods because of the large volumes handled. More livestock was cleared through the terminal public markets in 1932 than through all other markets combined. Although the relative importance of this type of market has decreased, the terminal public markets also outranked any other type of market in the volume of livestock handled in 1939 and 1947.

In ascertaining the average marketing charges at the terminal public markets, 20 of the larger markets were selected for study; geographical location and the volume handled were considered. The published tariffs of the stockyards companies, and the tariffs of the commission agencies located there, furnished the schedules of rates and charges which prevailed during the three periods studied, along with the descriptions of the services rendered for which the rates and charges applied. The charges for commission, yardage, and miscellaneous items, are per head of livestock sold, but for purposes of this study the rates^{wer} converted to charges and fees per 100 pounds on the basis of the average weights of livestock sold at terminal public markets during those years. Information was also obtained from the records of public hearings on rates and charges held by the Packers and Stockyards Administration of the U.S. Department of Agriculture, and from other published reports.

^{2/} Bjorka, Knute. Marketing Margins and Costs for livestock and Meat, U.S. Department of Agriculture, Tech. Bul. 932, page 20. 1947.

The principal items of expense of marketing livestock at the terminal public markets are commission, yardage, feed charges, and miscellaneous items, such as insurance, weighing, and inspection. The proportions of the total expense accounted for by each of these items varied during the three periods, largely because of the fluctuations in feed charges.

A commission is received for each head of livestock sold at terminal public markets by the market agency which acts as an agent for the shipper in handling and selling livestock consigned to the market. The amount of commission varies by species. It also varied by the size of lot consigned, being higher per head for small lots than for larger lots. In 1947, the average charges per 100 pounds for commission and yardage were 17 cents per hundred pounds for cattle, 40 cents for calves, 21 cents for hogs, and 35 cents for sheep and lambs. These expenses represent increases from 1939, of 21 percent for cattle, 29 percent for calves, 16 percent for hogs, and 16 percent for sheep and lambs. The combined expenses of commission and yardage changed very little from 1932 to 1939. The average expenses of commissions decreased slightly from 1932 to 1939 for each of the species, but similar changes did not take place at all markets. The decreases in commission were largely offset by increases in yardage, however. The expenses at markets tended to change in the same directions as prices changed but the changes were not proportional. Changes in charges for marketing services often lagged considerably behind the changes in prices.

A specified fee is charged by stockyards companies for each head of livestock sold at the markets - for the use of the yards irrespective of size of lots. At some markets the yardage fees were higher for truck than for rail receipts but, in more recent years, this difference has mostly been eliminated. In ascertaining the average yardage expenses at the terminal public markets the average expense at each market was weighted by the relative importance of that market in terms of gross weight. In cases where yardage rates were different for rail and truck receipts the relative importance of rail and truck receipts at these markets was considered. The services provided at different stockyards vary. At some, the yardage charge covers only the rental of pens for sales purposes whereas at others it may include the cost of unloading livestock, driving it to the sales pens, and driving it from the scales to the buyers' pens after it is sold.

Commission and yardage rates, as well as other charges at the terminal markets, are approved by the Packers and Stockyard Administration on the basis of reasonable costs of handling livestock at the markets, the value of the services performed, and allowance for a fair profit and a fair return on capital employed.

Average expenses for feeding livestock at the terminal markets during 1947 on a 100-pound basis were 6 cents for cattle, slightly less than 3 cents for calves, 6 cents for hogs, and 10 cents for sheep and lambs. This was ascertained by dividing the total feed expense for a given species of livestock by the estimated weight of all livestock of that species consigned to the public markets. These expenses represent increases from 1939 of 45 percent for cattle, calves, and sheep and lambs, and 100 percent for hogs. Likewise, the expenses of feeding during 1947 represented increases over 1932 of 65 percent for cattle, calves, and sheep and lambs, and 130 percent for hogs.

Expenses for feeding at the public markets depend on the charges made for feed and the quantity fed. The stockyards companies sell all grains, hay, and bedding that is used at the stockyards. Charges made for feed are generally on the basis of the actual cost of feed to the stockyards companies plus a reasonable amount as a handling charge.

From records of public hearings by the Packers and Stockyard Administration on rates and charges at the various markets, it was possible to estimate the average consumption of feed by species at markets including resales. For each of the three periods these were 23 pounds of hay per head of cattle, less than 2 pounds of hay per head of calves, 3 pounds of hay per head for sheep and lambs, and about 3 pounds of corn per head of hogs. The extent of feeding at each of the different markets in the study varied considerably with local practices of feeding and the activities of yard traders.

It was estimated that average charges for the combined miscellaneous charges such as fire insurance, brand inspections, weighing, and other minor items, were about 1 cent per hundred pounds for each of the species during each of the three periods.

Charges at Auction Markets.-Average charges per 100 pounds for marketing livestock at the auction markets were 35 cents in 1947, compared with 22 cents in 1939, $\frac{3}{4}$ and 19 cents in 1932 for all species, combined on the basis of their relative importance in terms of gross weight. Charges per 100 pounds for marketing cattle and hogs were less than for calves and sheep and lambs.

In 1947, the average marketing charges per 100 pounds at auctions were 30 cents for cattle, 48 cents for calves, 43 cents for hogs, and 45 cents for sheep and lambs. Average charges per 100 pounds in 1939 were 22 cents for cattle and hogs, 26 cents for calves, and 31 cents for sheep and lambs. Auction markets were relatively unimportant in 1932. Information on charges for marketing at auctions in 1932 are meager but indications are that they were not very different from charges for 1939. Expenses varied considerably among markets mainly because some operators based charges on a percentage of the gross sales value of the animals whereas others charged a flat rate per head.

Charges for marketing livestock at auctions were derived from the schedules of rates and charges as published in the tariffs of some of the larger auction markets now under supervision of the Packers and Stockyards Administration, and from information reported in other studies. Charges at each of these markets were developed, and these charges were averaged as data on the volume of livestock handled at each auction were not available. Many of the operators of auctions combined commission and yardage into a single charge but some levied separate charges.

Charges at the Local Markets.-Average charges for selling livestock at concentration yards were estimated to be 14 cents per 100 pounds in 1947, compared with 11 cents in 1939, $\frac{3}{4}$ and 9 cents in 1932. $\frac{3}{4}$ Specific data on the expenses of operating concentration yards in 1947 were not obtained but were estimated on the basis of the increases from 1939 to 1947 in the cost of marketing at other markets. Concentration yards when first established served primarily for consoli-

$\frac{3}{4}$ From U.S.D.A. Tech. Bul. 932, page 20, table 8.

dating relatively large shipments of hogs to the packing plants, but in more recent years they have handled other species of livestock in increasing numbers.

Average expenses of marketing livestock to country dealers or through local cooperative associations were estimated to be about 18 cents per hundred pounds in 1947, 15 cents in 1939, and 10 cents in 1932. Because only meager information was available on charges for marketing livestock through these channels, the expenses were assumed to be the same per 100 pounds for all species. The costs of transporting livestock to local markets, and the charges for local pick-up services were not included. Average charges at the local cooperative associations were based on earlier studies, and on examination of several of their annual reports. Information on the cost of handling livestock by dealers was not available but for this study the cost was assumed to be about the same as for the local cooperative associations.

Transportation Expenses

The average charge for transporting livestock to markets, or to other outlets, in 1947, was 46 cents per 100 pounds. This compares with 35 cents per 100 pounds in 1939, and 33 cents per 100 pounds in 1932. The average transportation charges for all livestock were computed by weighting together the average charge for each species according to the relative importance of each, based on the weight transported. These charges also combine the charges made for moving livestock by rail and truck.

Charges for transporting livestock from farms to markets, slaughtering plants, and feedlots in 1939 were taken as a base. ^{4/} Transportation charges in 1947 were figured by ascertaining the changes in rail and truck rates between 1939 and 1947. Likewise, the transportation charges in 1932 were figured by ascertaining the changes in rail and truck rates between that year and 1939. From 1939 to 1947, the transportation expenses for rail shipments increased 17 percent, and the expenses for truck shipments increased about 40 percent. From 1932 to 1939, both rail and truck expenses for transporting livestock increased about 6 percent.

Truck transportation of livestock increased in importance during the period covered by this study. Of the total number of cattle received at more than 60 public markets, 33 percent arrived by truck in 1932, 62 percent in 1939, and 66 percent in 1947. Truck receipts of hogs at these markets represented 50 percent of the total hog receipts in 1932, 68 percent in 1939, and 70 percent in 1947.

Rail rates for livestock between selected points were obtained for 1939 and 1947 from freight tariffs filed at the Interstate Commerce Commission. These were averaged for each of the 2 years and the rate of change was determined. Livestock trucking rates for 1939 and 1947 were obtained from tariffs published by several motor-carrier associations engaged in interstate trucking of livestock in the North Central and Mountain Regions. Rates for hauling livestock specified distances were calculated. These were combined by weighting according to the proportion of the livestock moving to market from various distances in the

^{4/} From U.S.D.A. Tech. Bul. 932, page 19, table 7.

Corn Belt in 1940, and the rate of change in average charges between 1939 and 1947 was determined. ^{5/}

The average rates of increase in costs of transporting livestock by rail and truck were combined by weighting according to the relative importance of each type of transportation. The combined rate of change between 1939 and 1947 was applied to the transportation charge for 1939 in arriving at the charge for transportation in 1947.

For 1932, information on rates for hauling livestock by truck was inadequate as the available livestock tariffs were few and rather unsatisfactory. Changes in rail rates for livestock between 1932 and 1939 were estimated by using a livestock rail-rate index developed by the Bureau of Agricultural Economics. ^{6/} Changes in truck rates were estimated by using an index of the cost of operating motortrucks.

Margins for Marketing Livestock in Early 1949

The margins for marketing livestock in early 1949 are tentatively estimated to be 79 cents per 100 pounds as compared with 72 cents per 100 pounds in 1947. This is an increase of 10 percent. It is estimated that charges at markets in March 1949 has increased about 4 percent and charges for transportation about 13 percent over the 1947 figures. On the average charges had advanced more at public markets than at auctions. Many auctions based their rates on the value of the livestock, and although prices of cattle, calves, and sheep, advanced moderately during this period the price of hogs declined. Reliable data on the marketing charges for March 1949 at concentration yards and by local cooperative associations and dealers were not available, and therefore the 1947 rates were used in making these over-all estimates.

Rail rates for livestock increased about 25 percent and rates for trucking increased about 6 percent from 1947 to March 1949. This difference in the percentage change in rates appears to be explained by the fact that truck rates had been adjusted upward by 1947 to a greater extent than rail rates, whereas adjustments in rail rates took place later. Between 1939 and 1947 truck rates had increased 40 percent compared with an increase of 17 percent in rail rates.

What adjustments might be expected in marketing charges in the future? They probably will change in the same direction as the trend in livestock prices but at a slower rate because of the relatively greater stability of the costs of transportation and labor, and most other marketing costs. Changes in marketing margins usually lag behind changes in livestock prices, whether the trend of prices is up or down. As an illustration, livestock prices declined sharply from the middle of 1930 to 1933 but few if any adjustments in marketing expenses had been made by 1932. Moreover, prices advanced greatly during and immediately after World War II but marketing and transportation charges were not increased materially until the advancing trend in prices had been in effect for several years

^{5/} Corn Belt Livestock Marketing Research Committee, Marketing Livestock in the Corn Belt Region, S. Dak. Agr. Expt. Sta., 365, pp. 175-179. 1942.

^{6/} Matlock, Clifford C., Trends in Railroad Traffic Freight Rates, and Prices, Perishable Agricultural Commodities, United States (processed), May 1941.

